

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U. S. Department of Energy

National Energy Technology Laboratory

SOLID STATE ENERGY CONVERSION ALLIANCE (SECA)

CORE TECHNOLOGY AND INNOVATIVE CONCEPTS

Funding Opportunity Number: DE-PS26-07NT43208

Announcement Type: Initial

CFDA Number: 81.089

Issue Date: 08/20/2007

Letter of Intent Due Date: Not Applicable

Pre-Application Due Date: Not Applicable

Application Due Date: 1/15/2008 at 8:00:00 PM Eastern Time

NOTE: NEW REQUIREMENTS FOR GRANTS.GOV

Where to Submit

Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

Registration Requirements

There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted>. Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

Questions

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII of this announcement explains how to submit other questions to the U.S. Department of Energy (DOE).

Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. When the AOR receives e-mail Number 5, it is their responsibility to follow the instructions in the e-mail to logon to IIPS and verify that their application was received by DOE. The titles of the five e-mails are:

- Number 1 – Grants.gov Submission Receipt Number
- Number 2 – Grants.gov Submission Validation Receipt for Application Number
- Number 3 – Grants.gov Grantor Agency Retrieval Receipt for Application Number
- Number 4 – Grants.gov Agency Tracking Number Assignment for Application Number
- Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:
Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

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PART I – FUNDING OPPORTUNITY DESCRIPTION

A. SUMMARY

The Department of Energy (DOE) National Energy Technology Laboratory (NETL) is seeking applications for the funding opportunity announcement entitled, “Solid State Energy Conversion Alliance (SECA) Core Technology and Innovative Concepts.” The purpose of this announcement is to develop science and technologies that address specific technical challenges and barriers faced by the SECA Industry Teams in the Cost Reduction and Coal Based Systems program.

This Core Technology and Innovative Concepts announcement focuses on the following specific areas of interest:

1. Theory, Investigation and Stability of Cathode Electrocatalytic Activity
2. Performance Degradation of Lanthanum Strontium Cobalt Ferrite (LSCF) Cathodes
3. Novel Fuel Cells for Coal-Based Systems
4. Sealing Systems Based on Viscous Glass

Applications will only be entertained for the specific areas of interests listed above and described later in this announcement. Applications submitted that do not address a specific area of interest of this announcement will be considered non-responsive.

B. BACKGROUND

The Department of Energy formed the Solid State Energy Conversion Alliance (SECA) in 2000 with a goal of producing a solid-state fuel cell module that would cost no more than \$400 per kilowatt. SECA is an alliance between government, industry, and the scientific community that strive to capitalize on the advantages of fuel cell technology and develop fuel cells that will be sold in virtually every market needing clean and affordable electric power. The key to the ambitious cost reductions is the development of fuel cell system modules that can be mass-produced using advanced manufacturing processes. These modules could be clustered into a variety of arrangements to supply stationary power for both central and distributed power generation schemes.

The Alliance is comprised of three groups: Industry Teams, Core Technology program participants, and federal government management. The Industry Teams design the fuel cells and handle most of the hardware and market penetration issues. The Core Technology program is made up of universities, national laboratories, small businesses, and other R&D organizations and addresses basic R&D and technological issues critical to the rapid commercialization of solid oxide fuel cell (SOFC). The federal government management facilitates interaction between Industry Teams and the Core Technology program as well as establishes technical priorities and approaches.

In 2006, SECA Industry Teams transitioned into Phase II of the Cost Reduction program after successfully developing 3-10kW prototype systems in Phase I. All SECA Phase I prototypes surpassed the DOE Phase I performance targets, representative of the giant leaps made toward SOFC commercialization. The prototypes demonstrated 1) an average efficiency of 38.5% with a

high of 41%, 2) average steady-state degradation of 2% per 1000 hours, 3) system availabilities of 97%, and 4) projected system costs ranging from \$724/kW to \$775/kW. Even while these numbers are impressive, more work needs to be done to improve the electrochemical performance of cathodes, improve (or reduce) degradation rates, and reduce the overall system costs.

In 2006, in order to address the issue of scalability and integration with advanced generation power plants, DOE combined the SECA Cost Reduction activities with the SECA Fuel Cell Coal-Based Systems program. The goal of the SECA Fuel Cell Coal-Based Systems program is to develop and demonstrate the fuel cell technology and scale-up required for central power stations that produce affordable, efficient, environmentally-friendly electricity from coal. The new program leverages the advances made in SOFC technology under the SECA Cost Reduction program, extending coal-based SOFC technology to large-scale centralized power generation.

SECA References:

<http://www.seca.doe.gov>

Solid-State Energy Conversion Alliance (SECA) website

http://www.fossil.energy.gov/programs/powersystems/fuelcells/fuelcells_seca.html

DOE Fossil Energy SECA website

<http://www.netl.doe.gov/technologies/coalpower/index.html>

NETL Coal and Power Systems website

<http://www.netl.doe.gov/technologies/coalpower/futuregen/>

FutureGen website

C. OBJECTIVES

This SECA Core Technology and Innovative Concepts funding opportunity announcement focuses on generating new scientific and engineering knowledge and creating technology breakthroughs to address technical risks and barriers that currently limit achievement of the SECA performance and cost goals for SOFC systems.

NETL anticipates the award of cooperative agreements with a period of performance of three years. Phase I will be 18 months; Phase II will be 18 months. If the Phase I work demonstrates sufficient technical merit and adequate program funds are available, the recipient will be allowed to enter into Phase II after a thorough review and evaluation of a continuation application. Phase II work will continue research and development to a level of sufficient maturity.

D. AREAS OF INTEREST

Applicants are cautioned that this announcement is a master announcement and that each area of interest has its own program-specific number for submission of applications. For example, Area of Interest 1, "Theory, Investigation and Stability of Cathode Electrocatalytic Activity" has a Funding Opportunity Number of DE-PS26-07NT43208-01, Area of Interest 2, "Performance Degradation of

LSCF Cathodes” has a Funding Opportunity Announcement number of DE-PS26-07NT43208-02, Area of Interest 3, “Novel Fuel Cells for Coal Based Systems” has a Funding Opportunity Announcement number of DE-PS26-07NT43208-03, and Area of Interest 4, “Sealing Systems Based on Viscous Glass” has a Funding Opportunity Announcement number of DE-PS26-07NT43208-04. Applications **cannot** be submitted under the master announcement.

The following areas of interest will be addressed under this announcement:

Area of Interest 1: Theory, Investigation and Stability of Cathode Electrocatalytic Activity.

Surface chemistry directly influences the nature of oxygen reduction reaction pathways on SOFC cathodes and the rates at which the individual processes proceed. Semi-empirical correlations between the chemistry and structure of oxide surfaces and their electrocatalytic performance would provide valuable guidance to SOFC developers and SECA Industry Teams wishing to enhance cathode performance. There is a general lack of surface-specific chemical and structural data that would allow defining the true cause-and-effect relationships. Phase I focuses on *ad hoc* or semi-empirical theoretical methods coupled with the necessary experimental work to fully understand the chemistry associated with the performance and stability of cathode materials. The SOFC cathode materials to be studied are bound by lanthanum strontium manganate (LSM) and LSCF. Phase I will also include the identification of potential specific surface modifications via infiltration or an alternate method that should increase the electrocatalytic activity of cathode materials. Phase II will focus on proving the theory and demonstrating with laboratory experimentation the viability of the approaches, suggested in Phase I, for improving SOFC cathode performance.

This Area of Interest is subject to the Exceptional Circumstance clause (see Part VIII). To ensure maximum benefit from Government investments in the SECA program and to facilitate rapid commercialization of technology, recipients under this Area of Interest shall be prohibited from entering into exclusive license agreements for patentable technology developed under this program, from the date of award through a period of one year after U.S. patent issuance, and is required to offer to each of the SECA Industry Teams in the Cost Reduction and Coal-Based Systems program the option to enter into a non-exclusive license upon terms that are reasonable under the circumstances, including royalties, for subject inventions developed under SECA.

Area of Interest 2: Performance Degradation of LSCF Cathodes. This topic area focuses on identifying and mitigating the degradation mechanisms of LSCF SOFC cathodes. The recipient shall incorporate advanced scientific techniques to identify the structural and chemical degradation mechanisms under realistic environmental conditions. Recipients shall focus on large size cells (~100 cm²) that use typical thin electrolytes (YSZ) and anode-supported (Ni-YSZ) cell compositions operating in the temperature range of 650-850°C. Phase I will focus on the study and understanding of LSCF degradation mechanisms and identify proposed improvements, including bulk cathode composition modifications, to mitigate degradation. In Phase II, the recipient shall develop, test and evaluate the proposed improvements.

This Area of Interest **is not** subject to the Exceptional Circumstance clause (see Part VIII).

Area of Interest 3: Novel Fuel Cells for Coal Based Systems. This topic area is focused on developing and demonstrating low-cost novel fuel cell designs appropriate for megawatt scale coal-based systems. The fuel cells shall use direct coal or raw coal syngas as the fuel type. It is expected that solid coal will include common contaminant speciations and concentrations whereas the gaseous coal-derived fuel will have the contaminants at a level of 30 ppm. The fuel cell stack cost goal, including manifolds, interconnects, contact paste and seals, is \$100/kW or less. Phase I

will consist of system design, identification of key performance parameters of the system, and cost analyses of the stack and system. Phase II will include development and validation of the low-cost novel fuel cell stack.

Reference on Coal Contaminants in Fuel Cell Systems:

J.P. Trembly, R.S. Gemmen, and D.J. Bayless, Journal of Power Sources, 163 (2007) 986-996.

This Area of Interest **is not** subject to the Exceptional Circumstance clause (see Part VIII).

Area of Interest 4: Sealing Systems Based on Viscous Glass. Seals for planar SOFCs are subject to a demanding set of imposed performance criteria due to the extreme operating environment. The seals must prevent the mixing of fuel and oxidant streams as well as prevent reactant escape to the surrounding environment. The seals must have a low electrical conductivity, be chemically and mechanically stable in a high temperature reactive environment (moist reducing and/or oxidizing conditions), and demonstrate chemical compatibility with the cell and interconnect materials of the particular SOFC cell/stack design. Volatile constituents (e.g., alkalis) in the seal should not have a deleterious effect upon cathode performance. Of particular importance is the ability to seal materials (e.g. interconnect alloys, Ni-YSZ cermet anodes) with differing coefficients of thermal expansion (CTE), and do so while exposed to temperature transients over a range from room temperature up to the maximum SOFC operating temperature (~ 850°C). In addition, the seals must accommodate the thermal expansion of the fuel cell caused by in-plane temperature gradients, the result of heat generated by the electrochemical reaction and removed by the cathode airflow, without imposing excessive stresses within the cell. Fuel leakage should be less than one percent (1%) for the duration of the seal life. The seal material must be capable of a service life of more than 40,000 hours and dozens of thermal cycles for stationary systems. Manufacturability and cost are critical factors in meeting SECA program goals.

Applications are sought for the research and development of novel viscous sealing concepts. Such concepts may offer significantly improved long-term structural durability under SOFC operating conditions, particularly with respect to accommodation of dimensional changes of cell/stack components resulting from thermal transients and gradients. These may include glasses for which the softening temperature is below the lower bounds of the SOFC operating temperature (650C) and are resistant to devitrification. Given that such a sealing material on its own may be unable to withstand the differential pressure across the seal (up to 2 psid) or the stack bearing load, it is envisioned that an engineered composite solution (e.g., an impregnated ceramic felt or other structure) will be required to carry bearing loads and retain the viscous sealing material. The ultimate objective is the development of an economically-practical seal material/system that can provide near-hermetic sealing under all operating conditions for the life of planar SOFC stacks. Proposed Phase I approaches should combine rigorous analysis and experimentation to characterize the chemical compatibility and stability of the sealing materials in the SOFC environment, as well as composite seal design and experimental validation. Phase II will entail larger-scale testing, potentially in partnership with other SECA Core Technology seal R&D efforts or one or more SECA Industry Teams.

This Area of Interest is subject to the Exceptional Circumstance clause (see Part VIII). To ensure maximum benefit from Government investments in the SECA program and to facilitate rapid commercialization of technology, recipients under this Area of Interest shall be prohibited from entering into exclusive license agreements for patentable technology developed under this program, from the date of award through a period of one year after U.S. patent issuance, and is

required to offer to each of the SECA Industry Teams in the Cost Reduction and Coal-Based Systems program the option to enter into a non-exclusive license upon terms that are reasonable under the circumstances, including royalties, for subject inventions developed under SECA.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT

DOE anticipates awarding cooperative agreements under this program announcement (See Part VI.B.2 Statement of Substantial Involvement).

B. ESTIMATED FUNDING

Approximately \$3,000,000 is expected to be available for new awards in FY 2008 and an additional \$8,900,000 is expected to be available in years FY 2009 through FY 2010.

C. MAXIMUM AND MINIMUM AWARD SIZE

- Ceiling (i.e., the maximum amount for an individual award made under this announcement):
NONE
- Floor (i.e., the minimum amount for an individual award made under this announcement):
NONE

D. EXPECTED NUMBER OF AWARDS

Under this announcement, DOE expects to make the following number of awards for each Area of Interest:

<u>Area of Interest:</u>	<u>Number of Awards</u>
Area of Interest 1: Theory, Investigation and Stability of Cathode Electrocatalytic Activity	1 - 2
Area of Interest 2: Performance Degradation of LSCF Cathodes	1 - 2
Area of Interest 3: Novel Fuel Cells for Coal Based Systems	1 - 2
Area of Interest 4: Sealing Systems Based on Viscous Glass	1 - 2

E. ANTICIPATED AWARD SIZE

Area of Interest 1: Theory, Investigation and Stability of Cathode Electrocatalytic Activity

Phase I: 18 months, \$250K DOE, \$50K Awardee Share

Phase II: 18 months, \$500K DOE, \$100K Awardee Share

Area of Interest 2: Performance Degradation of LSCF Cathodes:

Phase I: 18 months, \$200K – \$2,000K DOE, \$40K - \$400K Awardee Share

Phase II: 18 months, \$200K – \$2,000K DOE, \$40K - \$400K Awardee Share

Area of Interest 3: Novel Fuel Cells for Coal Based Systems:

Phase I: 18 months, \$200K DOE, \$40K Awardee Share

Phase II: 18 months, \$500K DOE, \$100K Awardee Share

Area of Interest 4: Sealing Systems Based on Viscous Glass:

Phase I: 18 months, \$250K DOE, \$50K Awardee Share

Phase II: 18 months, \$250K DOE, \$50K Awardee Share

F. PERIOD OF PERFORMANCE

DOE anticipates making awards that will run for up to three years. Phase I will be 18 months; Phase II will be 18 months. The first budget period will cover Phase I (18 months) with an option for a continuation of up to an additional 18 months (Phase II) contingent upon satisfactory performance of the first budget period.

G. TYPE OF APPLICATION

DOE will accept new applications under this announcement. Continuation applications will be required for selected projects to continue beyond the first budget period. A thorough review and evaluation by DOE will determine whether the project will continue into Phase II.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

All types of entities are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

B. COST SHARING

The cost share must be at least 20% of the total allowable costs for research and development projects (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law. (See 10 CFR part 600 for the applicable cost sharing requirements.)

C. OTHER ELIGIBILITY REQUIREMENTS

Federally Funded Research and Development Center (FFRDC) Contractors

FFRDC contractors are not eligible for an award under this announcement, but they may be proposed as a team member on another entity's application subject to the following guidelines:

Authorization for non-DOE/NNSA FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.

Authorization for DOE/NNSA FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE/NNSA will fund a DOE/NNSA FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant's cost share requirement will be based on the total cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

FFRDC Contractor Effort. The FFRDC contractor effort, in aggregate, shall not exceed 25% of the total estimated cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select “Apply for Grants,” and then select “Download Application Package.” Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

B. LETTER OF INTENT AND PRE-APPLICATION

1. Letter of Intent.

Letters of Intent are not required.

2. Pre-application

Pre-applications are not required.

C. CONTENT AND FORM OF APPLICATION – 424 (R&R)

You must complete the mandatory forms and any applicable optional forms (e.g., Disclosure of Lobbying Activities (SF-LLL)) in accordance with the instructions on the forms and the additional instructions below. Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.

- 1. SF 424 (R&R)** Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the DOE Financial Assistance Forms Page at http://management.energy.gov/business_doe/business_forms.htm under Certification and Assurances.

2. RESEARCH AND RELATED Other Project Information

Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

Project Summary/Abstract (Field 6 on the Form)

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5” by 11” paper with 1” margins (top, bottom, left and right) with font not smaller than 11 point. To attach a Project Summary/Abstract, click “Add Attachment.”

Project Narrative (Field 7 on the Form)

The project narrative must not exceed 25 pages, including cover page, table of contents, charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). The 25-page limitation excludes the following documents which are to be included as appendices within the project narrative file: Biographical Sketch, Current and Pending Support, and Bibliography and References Cited. Furthermore, the page limitation does not include other required attachments such as the Project Management Plan (PMP) and if applicable, FFRDC Budget, Commitment Letters from Third-Party Cost Share Contributors, and Team Commitment Letters. **EVALUATORS WILL ONLY REVIEW THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCES.** The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed. See Part VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment."

The Project Narrative file must be formatted to separately address each of the sections listed below. The page guidance identified below represents a recommended minimum and maximum number of pages for each subsection.

The format for this file should be as follows:

- A. Cover Page (indicating the Funding Opportunity Announcement number, name and address of the Applicant, point of contact, telephone/FAX number/E-Mail address, title of project and date of application)
- B. Table of Contents
- C. Technical Discussion
 - Technical Approach (5-10 pages)
 - Statement of Project Objectives (5-10 pages)
 - Technical and Management Capabilities, Experience, Team Structure and Personnel, Equipment and Facilities (3-5 pages)
- D. Appendices to Project Narrative
 - Biographical Sketch
 - Current and Pending Support
 - Bibliography and References Cited (provide a bibliography for any references cited in the Project Narrative section)
 - Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers

Merit Review Criterion Discussion.

To help facilitate the review process and to ensure all the review criteria listed in Part V.A. are addressed, the Applicant shall use the following format when preparing the Technical Discussion. **DOE WILL EVALUATE AND CONSIDER ONLY THOSE APPLICATIONS THAT ADDRESS SEPARATELY EACH OF THE MERIT REVIEW CRITERION.**

1. Technical Approach

The Applicant shall fully describe the planned technical approach to achieve the stated objectives of the area of interest and this Funding Opportunity Announcement. A clear, concise statement of the specific objectives or aims of the proposed project, the relevance

of the effort to the objectives in the Funding Opportunity Announcement and the expected outcomes or impacts shall be discussed. The Applicant shall convey a thorough understanding of the technical considerations of the problem and present a detailed theoretical and analytical discussion of the proposed technology or solution. A discussion of the technical uncertainties and risks that must be resolved to successfully develop the proposed technology or solution and identify ways to mitigate those uncertainties and risks shall also be provided.

A detailed Statement of Project Objectives should not be addressed in this section; rather, the underlying technical risks and considerations along with a complete description and technical merit of the proposed work should be presented. The manner and degree to which the proposed technical approach mitigates identified risks shall be explicitly addressed. The discussion and description must be in sufficient detail to permit the DOE to determine the potential for success and technical viability of the proposed effort.

2. Statement of Project Objectives

The Department of Energy's, National Energy Technology Laboratory uses a specific format for Statement of Project Objectives in its awards. In announcements such as this one, where the Government does not provide a Statement of Project Objectives (SOPO), the Applicant is to provide one, which the DOE will then use to generate the Statement of Project Objectives to be included in the award. The SOPO may be released to the public by DOE in whole or in part at any time. **It is therefore required that it not contain proprietary or confidential business information.**

The Applicant shall present a single, detailed SOPO that must address how the project objectives will be met, and clearly and concisely describe all activities to be completed over the course of the project. The SOPO should be organized in a Work Breakdown Structure (WBS) format. A detailed description of each task or activity for the proposed work shall be provided. The level of detail should be adequate for direct incorporation into a Cooperative Agreement with minimal modification. A general discussion of the work scope for Phase II shall be provided in sufficient detail to demonstrate that the proposed effort is reasonable and complete.

The SOPO is generally less than 10 pages in total for the proposed work. Several specific tasks have also been provided in the following format for the Applicant to insert into the Statement of Project Objectives at the appropriate location. Text for the required Project Management, Planning and Reporting Task (Task 1) is provided in the SOPO template below. Applicants shall prepare the Statement of Project Objectives in the following format:

TITLE OF WORK TO BE PERFORMED

(Insert the title of work to be performed. Be concise and descriptive.)

A. OBJECTIVES

Include one paragraph on the overall objective(s) of the work. Also, include objective(s) for each phase of the work.

B. SCOPE OF WORK

This section should not exceed one-half page and should summarize the effort and

approach to achieve the objective(s) of the work.

C. TASKS TO BE PERFORMED

Tasks, concisely written, should be provided in a logical sequence and should be divided into the Phases of the project.

PHASE I

Task 1.0 - Project Management, Planning and Reporting

The Recipient shall manage and direct the project in accordance with the Project Management Plan to meet all technical, schedule and budget objectives and requirements. The Recipient shall coordinate activities in order to effectively accomplish the work. The Recipient shall ensure that project plans, results, and decisions are appropriately documented and project reporting and briefing requirements are satisfied.

The Project Management Plan shall be updated in coordination with the NETL Project Officer such that it accurately reflects the current status of the project. Management of project risks shall occur in accordance with the risk management methodology delineated in the Project Management Plan in order to identify, assess, monitor and mitigate technical uncertainties as well as schedule, budgetary and environmental risks associated with all aspects of the project. The results and status of the risk management process shall be presented during project reviews and in Progress Reports with emphasis placed on the medium- and high-risk items.

Subtask 1.1 (Optional)

(Description)

Task 2.0 - (Title)

(Description)

PHASE II (Optional)

Task 3.0 - (Title)

(Description)

D. DELIVERABLES

The periodic, topical, and final reports shall be submitted in accordance with the attached "Federal Assistance Reporting Checklist" and the instructions accompanying the checklist.

Note: The Recipient shall provide a list of deliverables other than those identified on the "Federal Assistance Reporting Checklist" that will be delivered. These reports shall also be identified within the text of the Statement of Project Objectives. See the following examples:

1. Task 1.1 - (Report Description)
2. Task 2.2 - (Report Description)

E. BRIEFINGS/TECHNICAL PRESENTATIONS

The Recipient shall prepare detailed semiannual briefings (based upon the quarterly Progress Reports) for presentation to the DOE Project Officer at the NETL facility located in Morgantown, WV or Pittsburgh, PA. One of the briefings per year may be done remotely (e.g., WebEx) at the discretion of the DOE. Briefings shall be conducted by the Recipient to explain the plans, progress, and results of the effort. A kickoff briefing will also be required.

Presentation materials shall be provided to the DOE Project Officer as needed for internal NETL use or DOE Office of Fossil Energy Headquarters use.

In addition to providing the SOPO in Section 2, the Applicant must also provide a table listing the type and number of man-hours required for Phase I. The man-hours shall be related to the specific tasks and sub-tasks to be performed as identified in the Statement of Project Objectives and shall indicate the job disciplines and classifications (engineering, manufacturing, scientific, clerical, etc.) for each major task over the Phase I project period.

3. Technical and Management Capabilities, Experience, Team Structure and Personnel, Equipment, and Facilities

In this section, the Applicant must detail and discuss its overall technical and management experience relevant to the objectives of this Funding Opportunity Announcement. Highlight experience in managing projects similar in type, technology, size and complexity to the one proposed. It should also detail the relevant experience of all team members (consultants, subcontractors, partners, etc.).

The Applicant shall describe the method that will be used to maintain internal and inter-organizational control over budget, schedule, quality of performance and project end products. To this end, the Applicant shall discuss the team structure emphasizing how the overall program will be structured. The Applicant shall discuss how all of the various entities will work together to accomplish the proposed work. A description of organizational and individual responsibilities and activities assigned to each team member shall be provided. The key personnel involved and their relationship and availability to the project shall also be included. Additionally, the applicant must submit a BIOGRAPHICAL SKETCH APPENDIX. See below for specific instructions for preparing this appendix. The Biographical Sketch Appendix will not count in the Project Narrative page limitation.

A stand-alone Project Management Plan (PMP) shall be submitted that fully establishes the technical, budget and schedule base for the project. The PMP shall describe how the Recipient's roles and responsibilities relative to the Cooperative Agreement and the work elements of the SOPO will be implemented and managed. Special emphasis shall be placed on the proposed approach/methodology to identify, assess, monitor and mitigate perceived technical, schedule, budgetary and environmental risks associated with the proposed project. The PMP shall be submitted as a separate attachment and will not count in the Project Narrative page limitation. SEE ADDITIONAL DISCUSSION BELOW REGARDING FORMAT AND SUBMISSION OF THE "PROJECT MANAGEMENT PLAN".

The Applicant shall discuss the equipment and facilities that will be utilized by all members of the proposed team. In support of the Applicant's technical approach, a discussion of the availability and/or commitment and capabilities of the Applicant's (or team member's)

facilities and equipment, testing apparatus and laboratories shall be provided. The Applicant shall identify specific facilities and laboratories that will be devoted to this work, including any planned equipment or facility additions over the two phases.

Biographical Sketch Appendix: Provide a biographical sketch for the project director/principal investigator (PD/PI) and each senior/key person listed on the R&R Budget form. Provide the biographical sketch information as an appendix to your project narrative. Do not attach a separate file. The biographical sketch appendix will not count in the project narrative page limitation. The biographical information for each person must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

Education and Training:

Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree, and year.

Research and Professional Experience:

Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications:

Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights, and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities: List no more than 5 professional and scholarly activities related to the effort proposed.

Current and Pending Support Appendix: Provide a list of all current and pending support (both Federal and non-Federal) for the Project Director/Principal Investigator(s) (PD/PI) and senior/key persons, including subawardees, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers Appendix: Provide the following information in this section. This appendix will not count in the project narrative page limitation):

Collaborators and Co-editors: List in alphabetical order all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or

paper during the 48 months preceding the submission of this application. Also, list any individuals who are currently, or have been, co-editors with you on a special issue of a journal, compendium, or conference proceedings during the 24 months preceding the submission of this application. If there are no collaborators or co-editors to report, state "None."

Graduate and Postdoctoral Advisors and Advisees: List the names and current organizational affiliations of your graduate advisor(s) and principal postdoctoral sponsor(s) during the last 5 years. Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates

Other Attachments (Field 11 on the form):

If you need to elaborate on your responses to questions 1-5 on the "Other Project Information" document, attach a file in field 11 named "projinfo.pdf".

Also, attach the following files: (NOTE: These additional files do NOT count in the Project Narrative page limitation).

Project Management Plan.

A stand-alone Project Management Plan (PMP) should identify the activities/tasks to be performed, a time schedule for the accomplishment of the activities/tasks, the spending plan associated with the activities/tasks, and the expected dates for the release of outcomes. The PMP shall describe how the Recipient's roles and responsibilities relative to the Cooperative Agreement and the work elements of the SOPO will be implemented and managed. Special emphasis shall be placed on the proposed approach/methodology to identify, assess, monitor and mitigate perceived technical, schedule, budget and environmental risks associated with the proposed project. This plan should identify any decision points and go/no-go decision criteria. Applicants may use their own project management system to provide this information; however, the plan should be formatted to include the following sections, with each section to include the information as described below. Successful applicants must use this plan as a basis for reporting schedule and budget variances.

A. Executive Summary: Provide a description of the project that includes the objective, project goals and expected results.

B. Risk Management: Provide a detailed description of the proposed approach/methodology to identify, assess, monitor and mitigate perceived technical, schedule and budget risks associated with the proposed project. Project risk events are uncertain future events that, if realized, impact the success of the project. As a minimum, include the initial identification of significant technical, resource and management issues that have the potential to impede project progress and discuss strategies to minimize adverse impacts associated with those issues. Risks associated with environmental issues (e.g., time and budget required for Environmental Assessments, Environmental Impact Statements, etc.) should be addressed.

C. Milestone Log: Provide milestones for each budget period (or phase) of the project in a tabular format. Each milestone should include a title and planned start and completion dates. Milestones should be quantitative and show progress towards budget period and/or project goals. Explicitly identify those milestones that are Critical Path milestones. Identify the proposed verification method (e.g., particular test, associated type of documentation) for each milestone.

During project performance, the Recipient will report the Milestone Status as part of the required quarterly Progress Report.

D. Organization Management: Provide a chart showing the entities (Recipient organization divisions, subcontractors, consultants, etc.) relationships, roles (referenced to SOPO Tasks) and lead personnel for the project team. Specifically identify key personnel, defined as those personnel deemed critical to project success. Recipients are required to request advance approval from DOE for any change to key project personnel specified in application or award document. Describe how staffing and resource assignments will be managed to ramp-up at project start, as well as be managed throughout the project life, to support accomplishment of project objectives on schedule and within the planned expenditure of funds.

E. Baseline Cost Plan: Provide a table that shows, for each project calendar quarter, the planned Government and Recipient costs. This will be revised during award negotiation to be consistent with the "Forecasted Cash Needs" provided on the SF424A, Section D (the Baseline Cost Plan) as part of the final approved award budget. Note that, once finalized, the Baseline Cost Plan may not change without agreement of the DOE.

Also, provide a table that further expands on the Baseline Cost Plan by projecting, by month, the planned expenditure of Government and Applicant funds, respectively, by SOPO task and subtask and project team member for Phase I of the project.

During project performance, the Recipient will report the Cost Status as part of the required quarterly Progress Report. The Variance is derived by subtracting the Actual Incurred Costs from the Baseline Cost Plan. The Progress Report shall provide an analysis explaining the cause(s) any variance, impact on future project performance and corrective actions recommended/taken if needed to successfully complete the project within budget and on schedule.

F. Project Timeline: Provide a timeline of the project (e.g., Gantt chart) broken down by task and subtask, corresponding to the Statement of Project Objectives. The timeline should include, for each task and subtask, start and end dates. The timeline should show interdependencies between tasks and include the milestones that are identified in the Milestone Log (Section C).

G. Success Criteria at Decision Points: Identify project decision points. The conclusions of budget periods/phases shall be included as decision points. Provide success criteria for each decision point. The success criteria should be objective and stated in terms of specific, measurable and repeatable data. Usually, the success criteria pertain to desirable outcomes, results, and observations from the project.

H. Revisions: This section shall detail the revision history of the PMP. Each revision shall be accompanied by a detailed explanation.

[Note: During the award negotiation process, successful Applicants, in cooperation with the DOE Project Officer, will revise the version of the Project Management Plan that is submitted with their application. This Project Management Plan will be updated by the Recipient as the project progresses, and the Recipient must use this plan to report schedule and budget variances.]

Save this plan in a single file named “pmp.pdf” and click on “Add Attachments” in Field 11 to attach.

Commitment Letters from Third Parties Contributing to Cost Sharing If a third party, (i.e., a party other than the organization submitting the application) proposes to provide all or part of the required cost sharing, the applicant must include a letter from the third party stating that it is committed to providing a specific minimum dollar amount of cost sharing. The letter should also identify the proposed cost sharing (e.g., cash, services, and/or property) to be contributed. Letters must be signed by the person authorized to commit the expenditure of funds by the entity and be provided in a PDF format. Save this information in a single file named “TEAMCL.pdf” and click on “Add Attachments” in Field 11 to attach.

Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC) Contractor, if applicable. If a DOE/NNSA FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. This order and the DOE Field Work Proposal form are available at http://management.energy.gov/business_doe/business_forms.htm. Use the FFRDC name as the file name (up to 10 letters) and attach to the R&R Other Project Information form in Field 11 – Add Attachments.

Environmental Questionnaire You must complete the “Environmental Questionnaire (NEPA)” located at <http://www.netl.doe.gov/business/forms/nepasol.pdf>. Separate copies of this questionnaire should be completed by the principal offeror and each proposed subcontractor. If the proposed project includes activities at different locations, a separate questionnaire should be prepared for each location. The questionnaire(s) should be completed based on the objectives for Phase I only. Save these questionnaires in a single file named “Env.pdf” and click on “Add Attachments” in Field 11 to attach.

3. RESEARCH AND RELATED BUDGET (TOTAL FED + NON-FED)

Complete the Research and Related Budget (Total Fed & Non-Fed) form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV. G).

Budget Justification (Field K on the form).

Provide the required supporting information for the following costs (See R&R instructions): equipment; domestic and foreign travel; participant/trainees; material and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. If cost sharing is required, provide an explanation of the source, nature, amount, and availability of any proposed cost sharing. Attach a single budget justification file for the entire project period in Field K. The file automatically carries over to each budget year.

4. R&R SUBAWARD (Total Fed + Non-Fed) FORM

Budgets for Subawardees, other than DOE FFRDC Contractors. You must provide a separate cumulative R&R budget for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). Download the R&R Budget Attachment from the R&R SUBAWARD BUDGET (Total Fed + Non-Fed) FORM and e-mail it to each subawardee that is required to submit a separate budget. After the Subawardee has e-mailed its completed budget back to you, attach it to one of the blocks provided on the form. Use up to 10 letters of the subawardee's name as the file name.

5. Disclosure of Lobbying Activities (SF-LLL)

If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

Name of Document	Format	Attach To
SF 424 (R&R)	Form	N/A
RESEARCH AND RELATED Other Project Information	Form	N/A
Project Summary/Abstract	PDF	Field 6
Project Narrative, including required appendices	PDF	Field 7
Budget for DOE/NNSA FFRDC, if applicable	PDF	Field 11
Project Management Plan	PDF	Field 11
Commitment Letters from Third Parties	PDF	Field 11

Environmental Questionnaire	PDF	Field 11
RESEARCH AND RELATED BUDGET (Total Fed + Non-Fed)	Form	N/A
Budget Justification	PDF	Field K
R&R SUBAWARD BUDGET (Total Fed + Non-Fed) ATTACHMENT(S) FORM , if applicable	Form	N/A
SF-LLL Disclosure of Lobbying Activities , if applicable	Form	N/A

C. SUBMISSIONS FROM SUCCESSFUL APPLICANTS

If selected for award, DOE/NNSA reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable
- Environmental Questionnaires

D. SUBMISSION DATES AND TIMES

1. Pre-application Due Date

Pre-applications are not required.

2. Application Due Date

Applications should be received by 1/15/2008, not later than 8:00 PM Eastern Time. You are encouraged to transmit your application well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

E. INTERGOVERNMENTAL REVIEW

This program is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

F. FUNDING RESTRICTIONS

Cost Principles Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. The cost principles for commercial organization are in FAR Part 31.

Pre-award Costs Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

The cost of foreign travel is not allowable.

G. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

1. Where to Submit

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

1. Registration Process

You **MUST** complete the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least three weeks before the application due date.** It may take 21 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/assets/OrganizationRegCheck.pdf> to guide you through the process. **IMPORTANT:** During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner identification Number" (MPIN). When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e., Grants.gov registration).

2. Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. When the AOR receives email Number 5, it is their responsibility to follow the instructions in the email to logon to IIPS and verify that their application was received by DOE. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

Number 1 - Grants.gov Submission Receipt Number
Number 2 - Grants.gov Submission Validation Receipt for Application Number
Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number
Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number
Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

Part V - APPLICATION REVIEW INFORMATION

A. CRITERIA

1. Initial Review Criteria

Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement.

2. Merit Review Criteria

Technical applications submitted in response to this announcement will be evaluated in accordance with the three merit review criteria listed below. Applications shall be rated on a basis of a 1000 point scale, with the relative weight and maximum points attributable to each merit review criterion as indicated.

1. Technical Approach – 50% (500 points maximum)

- The Applicant shall provide a clear and feasible technical approach to achieve the stated objectives of the Funding Opportunity Announcement.
- The Applicant presents the underlying technical considerations along with a solid theoretical and analytical discussion for pursuing the proposed effort.
- The proposed solution has a reasonable prospect to provide a solution to the issue(s) identified in the topic.
- The Applicant shall provide a general discussion of the technical uncertainties and risks that must be resolved to successfully develop the proposed technology or solution. The Applicant proposes mitigation strategies to circumvent/overcome technical risks.
- The proposed approach uses standard methodologies and techniques to greatest extent possible.

2. Quality of the Statement of Project Objectives – 25% (250 points maximum)

- Appropriateness, rationale, and completeness of proposed Statement of Project Objectives.
- Adequacy of the work breakdown structure (WBS), including coverage of critical activities, organizational responsibilities, and matching resources to requirements.
- Appropriateness of proposed man-hours. Description and explanation of any subcontracting work.

3. Technical and Management Capabilities, Experience, Team Structure and Personnel, Equipment, and Facilities – 25% (250 points maximum)

- Clarity, completeness and effectiveness of the Project Management Plan in establishing a credible project base and in delineating how the SOPO will be implemented and managed, including sequence of activities, milestones and decision points.
- Appropriateness of the Applicant's consideration of project risk in the Project Management Plan.
- Demonstrated capability and experience of the Applicant and its participating organizations in managing projects that meet project objectives, within budget and on schedule.
- Demonstrated experience with similar relevant projects.
- Demonstrated credentials, capabilities, and experience of key personnel.
- Clarity, logic and effectiveness of the proposed project organization (team structure) to successfully complete the project.
- Quality, availability, and appropriateness of proposed personnel, facilities and equipment to realize the goals of the project.

3. Other Selection Factors

The selection official will consider the following program policy factors in the selection process:

- It is desirable to select for award projects that, in the context of the entire Office of Fossil Energy Fuel Cell project portfolio, represent a diversity of technical approaches, methods, and applications and/or market segments.
- It may be desirable to support complementary and/or duplicative projects, which when taken together, will best achieve the research goals and objectives.
- It is desirable to select for award projects which, when factored together, will complement the work already being performed by the SECA program participants and that will produce the greatest synergistic value to the SECA program and Industry Teams.

B. REVIEW AND SELECTION PROCESS

1. Merit Review

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Regulations and Guidance at <http://www.management.energy.gov/documents/meritrev.doc>.

2. Selection

The Selection Official will consider the merit review recommendation, program policy factors, and the amount of funds available.

3. Discussions and Award

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of

complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

DOE anticipates notifying applicants selected for award by 3/14/2008 and making awards by 5/2/2008.

Part VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES

1. Notice of Selection

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.) Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award

A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes either as an attachment or by reference: (1). Special Terms and Conditions; (2). Applicable program regulations, if any; (3). Application as approved by DOE/NNSA.; (4). DOE assistance regulations at 10 CFR part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; (5). National Policy Assurances To Be Incorporated As Award Terms; (6). Budget Summary; and (7). Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Administrative Requirements

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements

Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at

http://management.energy.gov/business_doe/business_forms.htm.

The National Policy Assurances To Be Incorporated As Award Terms are located at DOE http://management.energy.gov/business_doe/business_forms.htm.

Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.doe.gov/techtrans/sipp_matrix.html.

Statement of Substantial Involvement

RECIPIENT'S RESPONSIBILITIES. The Recipient is responsible for:

- Performing the activities supported by this award in accordance with the Project Management Plan, including providing the required personnel, facilities, equipment, supplies and services.
- Managing and controlling project activities in accordance with established processes and procedures to ensure tasks and subtasks are completed within schedule and budget constraints defined by the current Project Management Plan.
- Implementing an approach to identify, analyze, and respond to project risks that is commensurate with the complexity of the project.
- Defining and revising approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments.
- Coordinating related project activities with external suppliers, including DOE M&O contractors, to ensure effective integration of all work elements.
- Attending semiannual program review meetings and reporting project status.
- Submitting technical reports and incorporating DOE comments.
- Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer.

DOE RESPONSIBILITIES. DOE is responsible for:

- Collaboration with the Recipient on project plans to include project management, testing, and technology transfer plans, and recommending alternate approaches, if the plans do not address critical programmatic issues.
- Participating in project management planning activities, including risk analysis, to ensure DOE's program requirements or limitations are considered in performance of the work elements.
- Conducting semiannual program review meetings to ensure adequate progress and that the work accomplishes the program and project objectives.
- Recommending alternate approaches or shifting work emphasis, if needed.
- Integrating and redirecting the work effort to ensure that project results address critical system and programmatic goals established by DOE FE, in coordination with the DOE SECA Program and its Industry Teams (if appropriate).
- Promoting and facilitating technology transfer activities, including disseminating program results through presentations and publications.
- Serving as scientific/technical liaison between awardees and other program or industry staff.

C. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. See the NETL Business Page at <http://www.netl.doe.gov/business/forms/FederalAssistanceReportingChecklistExample> for the proposed Checklist for this program.

PART VII - QUESTIONS/AGENCY CONTACT

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the “Submit Question” feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program announcement on IIPS and then click on the “Submit Question” button. Enter required information. You will receive an electronic notification that your question has been answered. DOE/NNSA will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE/NNSA cannot answer these questions.

B. AGENCY CONTACT

Name:	Anne Cary
E-mail:	Anne.Cary@netl.doe.gov
Telephone:	(412) 384-5885

PART VIII - OTHER INFORMATION

A. MODIFICATIONS

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

“The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government’s right to use or disclose data obtained without restriction from any source, including the applicant.”

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

“The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation.”

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See “Notice of Right to Request Patent Waiver” in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE’s own needs or to insure the commercialization of technology developed under a DOE agreement.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

For Area of Interest 1 - Theory, Investigation, and Stability of Cathode Electrocatalytic Activity and Area of Interest 4 - Sealing Systems Based on Viscous Glass: Each patent waiver granted by DOE under these Areas of Interest shall contain a provision requiring the recipient to offer to each of the SECA Industry Teams the option to enter into a non-exclusive license for subject inventions developed under this announcement upon terms that are reasonable under the circumstances, including royalties. After this one-year period, the recipient will be free from the licensing restrictions. The field of use of the license is limited to SOFC applications, although greater rights could be offered at the discretion of the invention owner. The recipients may enter into license agreements in other fields of use provided that the rights defined for the Industry Teams are not violated and recipients must hold open offers to SECA Industry Teams for at least one-year after U.S. patents are issued. The recipients must agree to negotiate in good faith with any and all Industry Teams that indicate a desire to obtain at least a non-exclusive license. Exclusive licensing may be considered if only one Industry Team expresses an interest in licensing the invention. Partially exclusive licenses in a defined field of use may be granted to an Industry Team, provided such license would not preclude any other Industry Team that indicates a desire to license the invention from being granted at least a non-exclusive

license. In the event the Recipient and a SECA Industry Team Member cannot reach agreement after nine months from the start of diligent and responsible negotiations between them, the Industry Team shall have the right of a third party beneficiary to maintain an action in a court of competent jurisdiction to force licensing of the subject invention on reasonable terms and conditions. The licensing of any background patents owned by the recipient is not required.

EXCEPTIONAL CIRCUMSTANCES

On November 30, 2000, the Department of Energy executed a determination titled "Exceptional Circumstance Determination for Inventions Arising Under SECA." This Determination finds that circumstances surrounding SECA are exceptional and justify modified intellectual property arrangements as allowed by the Bayh-Dole Act (35 U.S.C. 202(a)(ii)). The Department intends to apply this Determination to any award made to domestic small businesses, universities or institutions of higher education, or non-profit organizations under this announcement.

The Department of Energy intends that disposition of rights to subject inventions made under awards resulting from this announcement will be subject to the terms of this Determination. The restriction of patent rights under the Determination are basically as described in above for entities other than domestic small businesses, universities or institutions of higher education, and nonprofit organizations. In developing the Determination, the Department strove to minimize the licensing rights that the Core Technology Program participants would have to agree to. In addition, under 35 U.S.C. § 203(2), an awardee adversely affected by this exceptional circumstance determination has a right to appeal the determination to the Department of Energy or to the United States Court of Federal Claims.

The duration of the Determination is 10 years. At the end of that time period, the DOE will assess the results and the benefits to the SECA program, and consider if the Determination should be reissued.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.